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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,621	12/22/1999	PETER SLADEN	200-009119-US	6377

7590 07/30/2003

CLARENCE A GREEN
PERMAN AND GREEN LLP
425 POST ROAD
FAIRFIELD, CT 06430

EXAMINER

SOLOMON, GARY L

ART UNIT PAPER NUMBER

2615

DATE MAILED: 07/30/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/470,621	SLADEN, PETER
Examiner	Art Unit	
Gary L Solomon	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) Interview Summary (PTO-413) Paper No(s) _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Image Sensor with Central Color Filtering Arrangement.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 through 5 and 7 through 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hieda (US 5,307,159). For claim 1, the Hieda reference discloses an image sensor having an array of image sensors and a filter structure disposed in relation to the image sensors, the filter structure comprising blocks of filter groups, each group having a combination of one or more areas adapted so as to allow light to pass there through onto corresponding areas so as to allow light to pass there through onto corresponding image sensors without color filtering (Claims 1, 2 and 3).

For claim 2, the Hieda reference discloses all the limitations and also the said one or more areas adapted so as to allow light to pass there through onto corresponding image sensors with color filtering comprise two filters (Claim 3).

For claim 3, the Hieda reference discloses all the limitations wherein the two color filters are one each red and one each blue filters (Claim 5).

For claims 4 and 5, the Hieda reference discloses all the limitations wherein said one or more areas adapted so as to allow light to pass there through onto corresponding image sensors without color filtering comprise four filter-less areas or four non-color filters (Figure 2a).

For claim 7, the Hieda reference discloses all the previous limitations and the image sensors are CMOS image sensors (Column 1, Line 14, Note: MOS is recognized as CMOS).

For claim 8, the Hieda reference discloses all the previous limitations, wherein said one or more areas adapted so as to allow light to pass there through onto corresponding image sensors without color filtering include one more color filters disposed partially there over (Figure 2a Note: There are numerous Colorless Filters).

For claim 9, the Hieda reference discloses all the previous limitations, wherein said one or more areas adapted so as to allow light to pass there through onto corresponding image sensors without color filtering comprise color filter strips (Figure 2a Note: There are numerous Red and Blue Filters).

For claim 10, the Hieda reference discloses all the previous limitations, wherein said color filtering areas are disposed centrally in the filter group and said areas without color filtering are disposed generally in a square like configuration around the central color filters (Figure 2a Column 3, Lines 35 through 48).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hieda in view of Juenger (US 5,778,106). The Hieda reference discloses all the previous limitations, but lacks the strip-line formation of the said areas of filters in said respective areas of the filter structure. However, the Juenger reference teaches a non-square formation of RGB filters (ABSTRACT, Column 4 Lines 38 through 68, and Figure 1B). A strip line formation of pixel filters is an obvious variation of non-square filters. Accordingly so, it would have been obvious to one of ordinary skill in the art at the time of the invention to configure the strip-line or non- square pixel filters with those of Hieda in order to balance sharpness in each of two orthogonal sampling directions in the context of striped color filter arrays and dual resolution reconstruction.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- GB 2014397 A 08/22/1979 Kazuhiro Sato, Shusaku H04N 9/04 3/14

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L Solomon whose telephone number is (703)-305-4370. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christensen, B Andrew can be reached on (703)-308-9644.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

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(703) 872-9314, (for informal or draft communications, please label
"Proposed" or "Draft")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed
to the customer service number **(703) 306-0377**.



July 24, 2003



ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600